

REMARKS

The Office Action mailed September 19, 2005 has been carefully considered. Reconsideration in view of the following remarks is respectfully requested.

Rejection(s) Under 35 U.S.C. § 103 (a)

Claims 1 – 6, 9, 11 – 15, 21 – 29, and 33 – 37 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Hirasawa et al. (U.S. pat. no. 5,369,803, hereinafter, “Hirasawa”) in view of Ciccarelli et al. (U.S. pat. no. 6,498,926, hereinafter, “Ciccarelli”). Claims 7 and 16 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Hirasawa in view of Ciccarelli, and further in view of Kerth et al. (Pub. no. US 2005/0003762, hereinafter, “Kerth”). Claims 10, 17 – 20 and 30 – 31 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Hirasawa in view of Ciccarelli, and further in view of Takeda (U.S. pat. no. 5,524,044, hereinafter, “Takeda”). Claim 8 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Hirasawa in view of Ciccarelli, and further in view of Kerth, and further in view of Russo (U.S. pat. no. 6,301,297, hereinafter, “Russo”). Claim 32 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Hirasawa in view of Ciccarelli, and further in view of Takeda, and further in view of Kerth.

An object of the invention is to increase the dynamic range of a receiver and prevent spurious interference from overpowering signals. Claim 1 states that “the downconverter [has] one or more active stages configured such that signal amplitudes at which said one or more active stages become non-linear are increased relative to corresponding active stages in the receiver.” The Office Action acknowledges Hirasawa’s failure to disclose this feature of claim 1, and proposes to combine Hirasawa with Ciccarelli in order to remedy this failure.

Ciccarelli is directed to a system for minimizing power consumption in a receiver by varying the operating point (IIP3) based on the varying level of non-linearity in the receiver. A complex measurement is performed in order to determine this varying level of non-linearity, and the results of the measurement are then used to vary the operating point of various components in

the receiver in order to optimize power consumption levels. There is no disclosure in Ciccarelli of increasing dynamic range using a downconverter that has one or more active stages configured such that signal amplitudes at which the one or more active stages become non-linear are increased relative to corresponding active stages in a receiver. In the claimed invention, there is both a receiver and a downconverter, each of which has active stages (for example mixer 30 and local oscillator 35 in downconverter 10, and corresponding stages that are not shown in receiver 12). The invention is configured such that the active stages in the downconverter (enhancer 10) effectively tolerate higher signal amplitudes before becoming non-linear, as compared with the active stages in the receiver 12. Considered singularly or in combination, Hirasawa and Ciccarelli fail to disclose both a receiver and a downconverter, each of which has active stages, configured such that the active stages in the downconverter effectively tolerate higher signal amplitudes before becoming non-linear, as compared with the active stages in the receiver.

The passages in Ciccarelli to which the Office Action points—namely, col. 1, lines 43-62, and col. 4, lines 46-67—are, in the first instance, a basic background discussion of non-linearity, explaining its mathematical characterization in terms of non-linear equations and the weight and impact each term of the equation has on the signal of interest, and in the second instance, a summary of the procedure used to measure non-linearity and to adjust operating points accordingly. Neither of these passages, or any other part of the Ciccarelli disclosure, relates to features which the invention is at least in part the subject of, as set forth for example in claim 1, which is, namely, increasing receiver dynamic range in order to prevent interference from overpowering signals. Therefore, even if Ciccarelli were properly combinable with Hirasawa, the presently claimed invention would not result or be rendered obvious.

Applicants further respectfully contest the propriety of combining Ciccarelli and Hirasawa. As previously explained, in Hirasawa, the primary objective is to reduce signal attenuation caused by transmission through coaxial cables 41, 42, and 43. Hirasawa's concern with attenuation does not relate to the power conservation issue addressed in Ciccarelli, or to the issue of increasing dynamic range in the presently claimed invention. Therefore one of ordinary skill in the art would not look to Ciccarelli, directed to power conservation in a wireless system,

in order modify Hirasawa, directed to signal attenuation in a coaxial cable, in order to achieve a dynamic range improvement as the presently claimed invention seeks to do, even if the issue of increased dynamic range were one of interest in a system such Hiraswa's, which cannot be maintained in the absence of any evidence to the contrary in Hirasawa. It will be recalled that according to the Manual of Patent Examining Procedure (M.P.E.P.),

To establish a *prima facie* case of obviousness, three basic criteria must be met. First there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in the applicant's disclosure.¹

Applicants contest the motivation to combine Hirasawa and Ciccarelli which, according to the Office Action, is to increase power consumption. Hirasawa does not raise the issue of power consumption, and Applicants respectfully submit that its use to justify the combination of Hirasawa and Ciccarelli is grounded in impermissible hindsight, based on familiarity with Applicants' disclosure and the desire to justify a combination of references whose subject matter and objectives are insufficiently related to each other or to Applicants' invention.

The above shortcomings of the combination of Hiraswa and Ciccarelli are not remedied by Kerth, and therefore even if such a combination were proper, the invention of claims 7 and 16 would not result or be rendered obvious. Similarly, the shortcomings are not remedied by Takeda, and the combination of Hiraswa and Ciccarelli with Takeda would therefore neither result in or rendered obvious the invention of claims 10, 17 – 20 and 30 – 31. Similar reasoning applies to the rejections of claims 8 and 32.

¹ M.P.E.P § 2143.

Conclusion

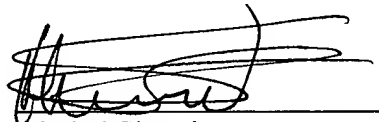
In view of the preceding discussion, Applicants respectfully urge that the claims of the present application define patentable subject matter and should be passed to allowance.

If the Examiner believes that a telephone call would help advance prosecution of the present invention, the Examiner is kindly invited to call the undersigned attorney at the number below.

Please charge any additional required fees, including those necessary to obtain extensions of time to render timely the filing of the instant Amendment and Reply to Office Action, or credit any overpayment not otherwise credited, to our deposit account no. 50-1698.

Respectfully submitted,
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Dated: December 19, 2005


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